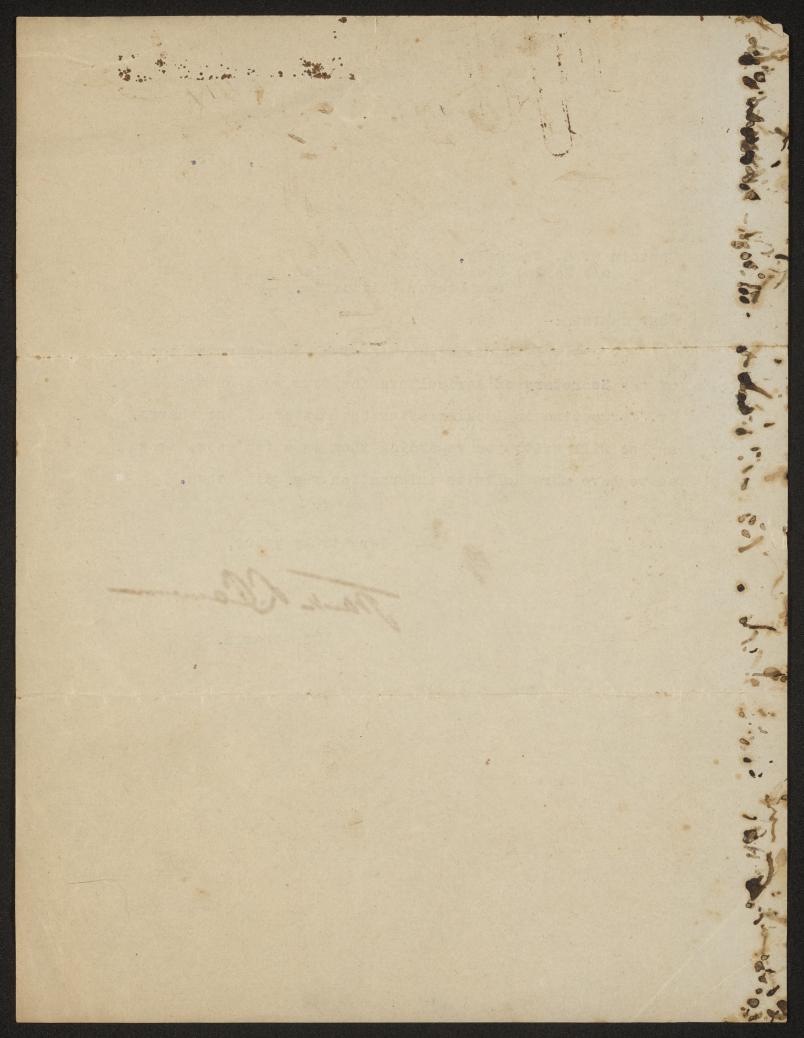
ADDRESS ALL COMMUNICATIONS TO "CHIEF, BUREAU OF SOILS." UNITED STATES DEPARTMENT OF AGRICULTURE, BUREAU OF SOILS. WASHINGTON, D. C. PHYSICAL AND CHEMICAL INVESTIGATIONS. July 20, 1911. AAW c Captain W. C. Crandall, c/o Marine Biological Association, San Diego, California, Dear Captain:-I am enclosing herewith the authorization of the Secretary of Agriculture for your work on the kelps. Dr. Turrentine is looking after the matter of the charts, and we will write you regarding them in a few days, as soon as we have more definite information regarding them. Very truly yours, In Charge.



United States Department of Agriculture,
Office of the Hecretary,
Washington, D. C.

No. 1410

July 14, 1911.

Mr. W. C. Crandall.

Scientific Expert of the Marine Biological Association of San Diego, California.

(Through the Chief, Bureau of Soils.)

Sir:

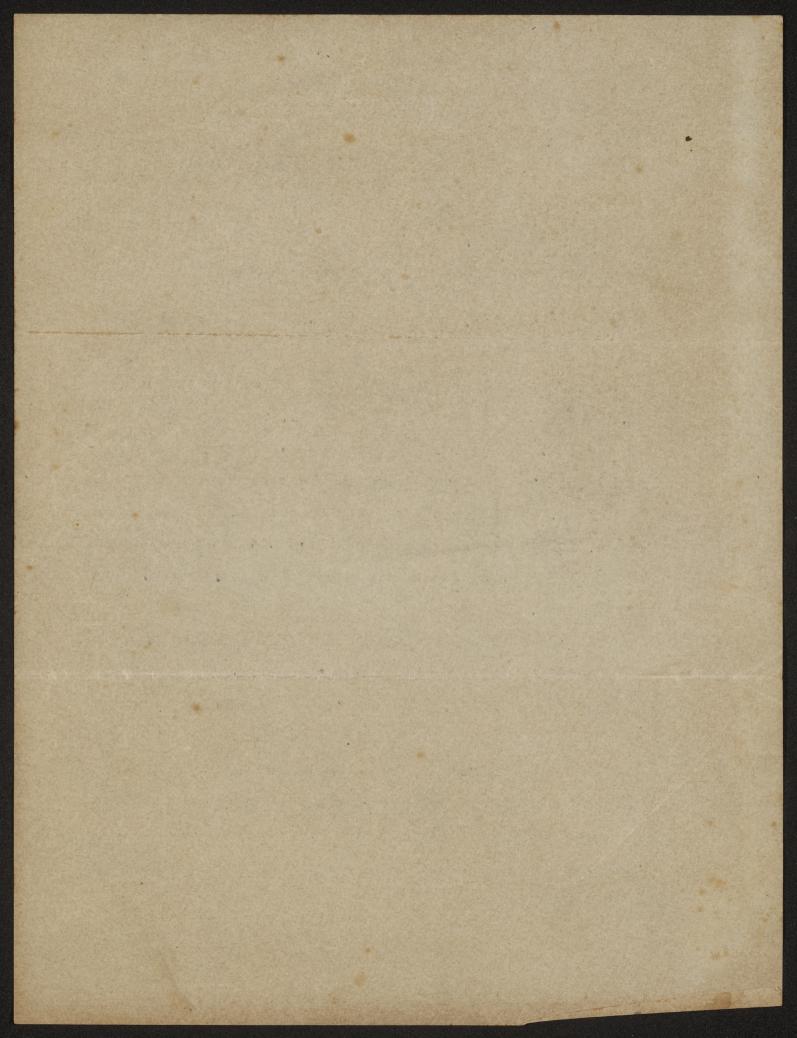
Authority is hereby granted you, under instructions from the Chief of the Bureau of Soils, to investigate the extent, locations, botanical and ecological characteristics of Sea Algae and Kelps in the waters adjacent to San Diego, with such other field observations as are practicable, looking to the economic utilization of these materials, with special reference to their use as a source of potash fertilizers.

You are further authorized to render a report to the Bureau of Soils not later than October 1, 1911 on the investigations named, the same to be accompanied by maps and other necessary and desirable material. If this report is accepted, you will be paid the sum of \$200.00 for the same, which amount will cover all expenses connected therewith.

Expenses incurred hereunder will be paid from the appropriation "General Expenses, Bureau of Soils, 1912" (Investigation of Fertilizer Resources).

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BUREAU OF SOILS,

WASHINGTON, D. C.

PHYSICAL AND CHEMICAL INVESTIGATIONS.

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October 21, 1911.

Captain W. C. Crandall, San Diego, California,

Dear Captain:-

letter written by the Solicitor of the Department in response to a request of mine for an opinion about the jurisdiction over the kelp beds. This decision, if it holds in the Courts, will make future complications, but I do not see that it in any way affects our work, and as far as human judgment can determine it seems probable that Congress will favor the work and provide for our going ahead along the line which we have already discussed tentatively.

I was delayed in returning to Washington by having to go to Kansas City for a week and a
few days after reaching Washington I found it necessary
to go down to Tennessee and so lost nearly another week.
That with the accumulation of work during the summer has
delayed me so that I have just taken up the work on the
reports, although arrangements for reproducing the maps
have been under way for several days. The more I think
about the matter the more satisfied I am with our summer's
work on the kelps, and I feel that we are going to make

PARTIE TO THE COLOR OF THE PARTIES O Crandall:-

a first class showing. Both Rigg's report and that of Prof. McFarland are very interesting, and I am looking forward to something equally as interesting from Mr. Setchell. As it happens, you, Rigg and McFarland all did your work rather differently from one another, and it will be very interesting and valuable for us to get together and plan a systematic campaign for next year's work, but that of course we shall not be able to plan for definitely until we have some assurance that Congress is going to direct us to go ahead.

I think it would be wise for you to show a copy of Mr. McCabe's letter to Mr. Firmin and his colleagues, and it might be well, when you find it convenient. to show it to Mr. Balch also.

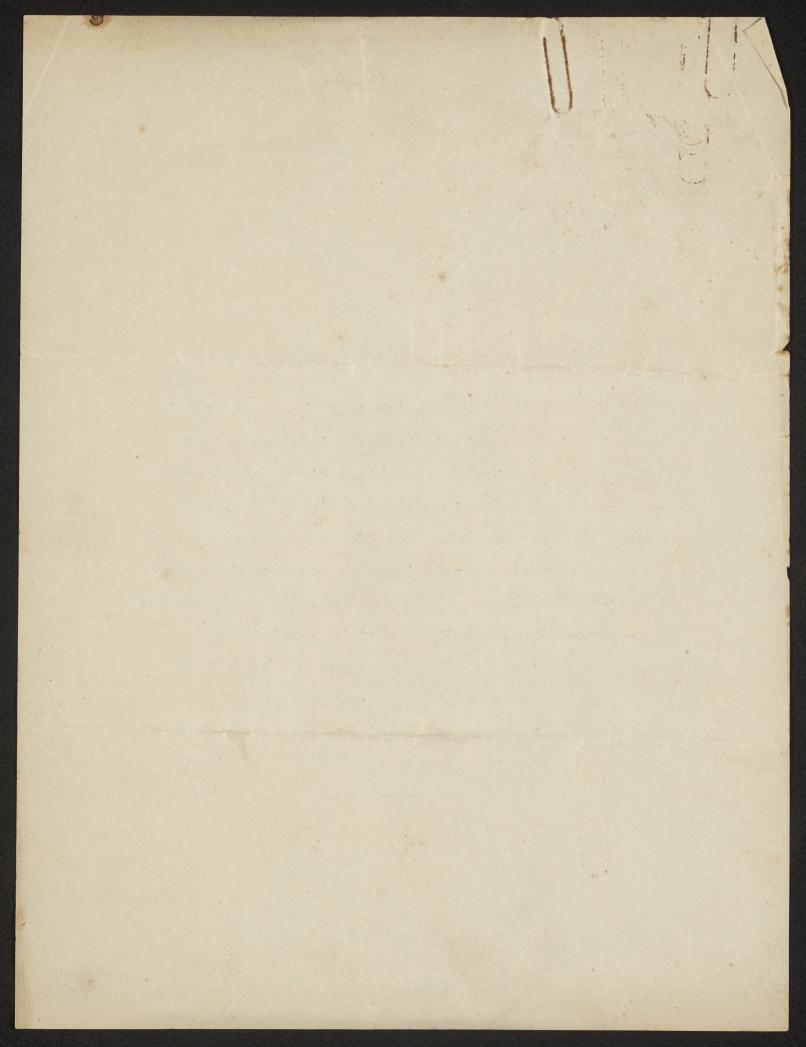
With best wishes to Professor and Mrs. Ritter and our other friends,

Sincerely,

In Charge.

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OFFICE OF THE SOLICITOR October 12. 1911. Chief of Bureau of Soils, Department of Agriculture, Sir: + + + + + + + + + + + + + + + + + + + Jurisdiction over the shores of the sea below the line of high tide and for a distance of one marine league or three geographical miles out to sea from the line of low water is wholly within the respective states; subject to the paramount of the federal government to regulate commerce and navigation, while the sea beyond the three mile limit is open to all the nations. Bays whose headlands are not more than six miles apart, measuring from low water, are subject to the same extent to the jurisdiction of the state within which they lie. The right to regulate the taking of kelp within the limits above described is therefore within the several states: while neither the state nor the federal government has any control over the water beyond that limit. Very respectfully, G. M. McCabe, Solicitor.



WASHINGTON, D. C.

PHYSICAL AND CHEMICAL INVESTIGATIONS.

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November 24, 1911.

Captain W. C. Crandall,

San Deigo, California,

Dear Captain:-

report, including the kelp work, ready and are busily at work on it now. Unfortunately, in going over the several papers there is a confusion as to just what was found to be the percentage of dry weight of kelp and of ash as compared with the wet weight of kelp, or perhaps I should better say the fresh weight. In your paper you speak of 10 per cent ash and we would like to know whether this is the incinerated plant or merely the dried plant. In other words, is the dry weight 10 per cent of the wet weight or is the ash 10 per cent (after burning off the organic matter) of the wet weight. We are strongly inclined to accept your figures as the standard and would therefore like to have an exact statement from you.

Please wire reply as soon as practicable, telling the telegraph operator to charge government rates;

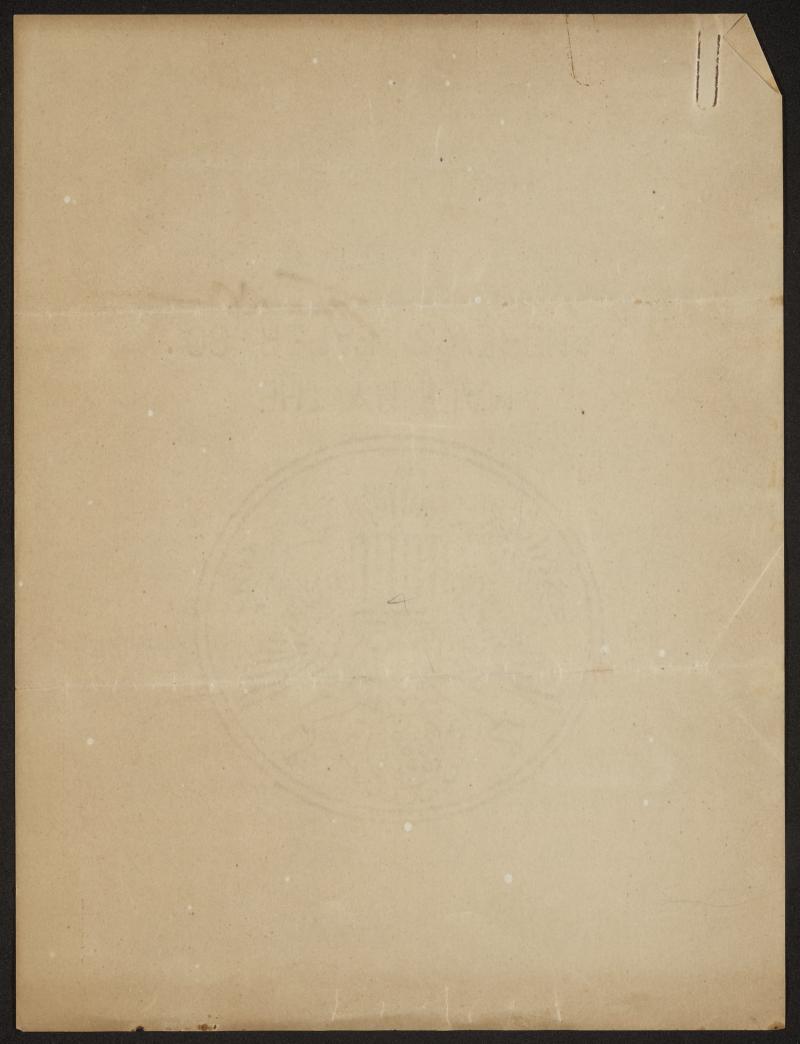
message to be sent collect at this end. It is important that we should have this information as early as possible.

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With kindest regards to the Ritters and our other friends,

Mank Mameron

In Charge.



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BUREAU OF SOILS,

WASHINGTON, D. C.

PHYSICAL AND CHEMICAL INVESTIGATIONS.

December 21, 1911.

Mr. W. C. Crandall, San Diego, California.

Dear Crandall:-

I was very glad to get your letter this morning and the information it contained. The C.C.C. are too low on their per cent of potash as our analyses show. I am afraid they are too high on their per cent of dry kelp from wet, but hope not.

Our report has gone to the President, been transmitted to Congress and ordered printed, so that it should be out before long and will I think look quite impressive. The Committee on Agriculture is considering our sad case just now and I am quite hopeful, that, in spite of an economical wave, Congress will give us enough to go ahead. As soon as I know anything definite I will write to you. While not committing yourself to anything definite it might be well to be considering the possibilities in the way of personnel and equipment to continue your surveys clean up to Cape Flattery. My present idea is for you to take the Coast of United States and send Rigg and party to Alaska. If you could get off by the last of May and work steadily for four months its seems to me you could clean up the mapping job. How does it appeal to you? Give me your ideas.

With best wishes for the Xmass Season and greetings to our friends at La Jolla and San Diego.

Sincerely yours,

in Charge.

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BUREAU OF SOILS,

WASHINGTON, D. C.

PHYSICAL AND CHEMICAL INVESTIGATIONS.

December 22, 1911.

Mr. W. C. Crandall,

SanDiego, California.

Dear Crandall:-

The lid is off regarding public discussion of our past summers work, and in fact the more newspaper and similar notice it now gets, the better for future work. Probably you would like to work up something for your local press and get your own end of the work special prominence. This is desirable for many reasons. I am enclosing a memorandum containing the points we specially desire noticed and if you build up on this a story about your own efforts, to strike your local people, and gain the whole project a very desirable support. The only suggestion I have to offer is that you emphasize the fact that this work is being carried on by the <u>Bureau of Soils</u>.

Sincerely yours,

In Charge, Physical and Chemical Investigations.

Frank Warne

Enclorum

The second of th the better for future ears. Probably you cometaing for your load prope and got juice out